ban against the single-purpose swine flu vaccine remains in effect. Califano acted after a panel of scientists and other specialists, asked by HEW to review the immunization policy, recommended that the moratorium be ended.

The massive swine flu immunization program was stopped abruptly two months ago when accumulating evidence indicated that risk of a rare paralysis (Guillain-Barre syndrome) was increased among people who had received either type of swine flu vaccine. Public health officials estimate that one in 120,000 vaccine recipients developed the syndrome, which appeared two to three weeks after vaccination. In announcing the policy change, Califano said he had to weigh the excess risk of death from Guillain-Barre syndrome, about one in a million, against the risk of death from influenza, which he said could kill approximately 1,260 persons in a million among elderly and chronically ill people.

Scientists do not agree on the nature of the relationship between the swine flu vaccine and Guillain-Barre disease. "There is a slightly enhanced risk over background, we agree on that," says E. D. Kilbourne of Mt. Sinai School of Medicine. Kilbourne believes it is not specifically the swine flu virus that causes the syndrome, but rather an abnormal immunological reaction in a tiny fraction of the population. "A multiplicity of infectious agents might stimulate the abnormal response," Kilbourne says. "It could be from immunization with anything." Among unvaccinated people, he explains, the syndrome often occurs soon after a viral illness, again suggesting an unusual response to infection.

Discussion among scientists at the Perspectives in Virology symposium in New York last week focused on whether stimulation of so rare a disease would have been detected among previous immunization programs. It has not shown up in polio immunization programs in the United States or in Europe. John P. Fox of the University of Washington points out, however, that Guillain-Barre disease is less frequent and milder among children, the targets of most polio vaccination programs. "Nowhere in our previous national experience have so many people received vaccines in so short a time," Fox says. Kilbourne also stresses the large amount of money and computer assistance applied for the first time to detection of side effects.

The virologists generally approved of the reinstatement of the flu shots for the high-risk groups. Saul Krugman of New York University summarized: "When you weigh risks and benefits carefully, there is an 80 percent effective capacity of preventing infection, against the small risk of Guillain-Barre syndrome, which we never would have known about without a deliberate, careful attempt to look at every possible side effect." □

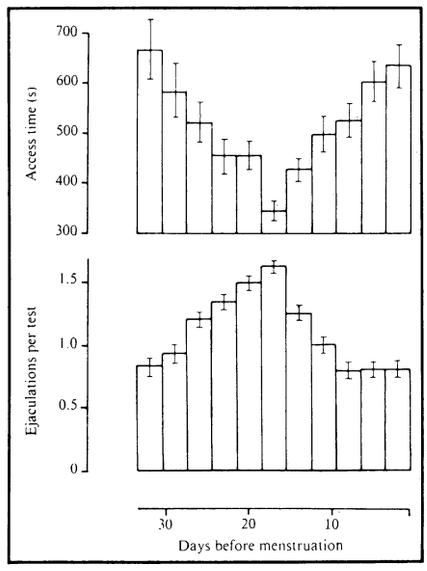
Primate sex preference at ovulation

In lower mammals, mating occurs only at the time of ovulation. Not so in humans and other primates; copulation may occur at any time during the female's menstrual cycle. However, it now appears, according to research reported in the Feb. 3 NATURE, that both male and female primates are more interested in sex during the female's fertile period than at other times. Such a finding is hardly unexpected since it would encourage the survival of a species in which sex serves more than a purely reproductive function. The report also shows that the heightened sexual interest in both male and female primates at the time of ovulation depends on sex hormones secreted by the female.

Richard P. Michael and R.W. Bonsall of Emory University School of Medicine studied the sexual behavior of rhesus monkeys at various periods of the female rhesus monkeys' menstrual cycles. Since the male rhesus monkey is nearly twice the size of the female, it is difficult to obtain an independent measure of the female's sexual motivation uninfluenced by the threat of male aggression. So Michael and Bonsall used an operant conditioning technique in which females controlled access to males.

A female's testing cage was divided by a movable partition. If she pressed a lever on her side, the partition raised and she was able to pass to the other side of the cage, which contained a male partner. After she reached the male, a behavioral test was conducted during which observers scored various aspects of the pair's behavior from behind a one-way mirror.

Results were obtained from 1,440 behavioral tests of 17 pairs of male and female monkeys conducted during 63 menstrual cycles. They showed that the females were more anxious to gain access to males right before or during ovulation than at any other time during their menstrual cycles—that the females were quicker to gain access to the males during this period than they otherwise would have. Male ejaculation was also greatest during this period of the menstrual cycle, the findings revealed.



Heightened sexual interest of male and female monkeys coincides with ovulation.

To obtain more precise information on the temporal relationship between these sexual behaviors and the females' sex hormone status, Michael and Bonsall collected blood samples from five females on five alternate days (daily near midcycle, the time of ovulation) during 33 menstrual cycles. They analyzed these samples for sex hormones. All these cycles appeared normal, with the characteristic preovulatory estrogen peak occurring 19 to 17 days before the next menstruation. Hormonal and behavioral data from the preovulatory periods of these 33 cycles were then combined by aligning them on the days of the estrogen peaks. The highest average ejaculation frequency and the fastest average access time both occurred together one day after the estrogen peak—right before or at ovulation. On that day all males always succeeded in ejaculating, and all females always pressed for access to their partners.

Still further proof that a female rhesus monkey's sex hormones strongly influence both her sexual behavior and that of her partner was obtained by Michael and his co-workers back in 1972. When sex hormones were injected into female rhesus monkeys whose ovaries had been removed, both the sexual behavior of the females and of their sexual partners changed.

Thus, female sex hormones appear to synchronize and maximize female rhesus monkeys' sexual motivation and male rhesus monkeys' ejaculatory performance. "The neuroendocrine mechanisms underlying the behavioral synchrony between the sexes and the timing of ovulation," Michael and Bonsall conclude, "clearly have a selective advantage by optimizing the chances for successful fertilization and, thus, for survival in this highly evolved primate species in which sexual behavior serves more than a purely reproductive function."

A crucial question not answered by this research, however, is how do sex hormones secreted at the time of ovulation by the female make the male more interested in sex than usual. Does the female's heightened enthrallment, due to the sex hormones she secretes, spur the male to greater enthusiasm about sex? Possibly. Yet chemical sex attractants are probably also responsible for the male's excessive zest for sex at the time of ovulation since female monkeys are known to secrete such attractants.

And then there is a still more pressing

question: Do these findings apply to humans? Because women's sex drives are known to fluctuate throughout their menstrual cycles, it is quite likely that women are more attuned to intercourse at ovulation than at other times, and that their heightened drive at this period puts their sex partners more in the mood for intercourse. Sex attractants secreted at the time of ovulation may likewise serve as a come-on for men. In 1975, Michael and his colleagues identified acids in the vaginal secretions of women that were identical to monkey sex attractants, and more of these acids are present at the time of ovulation than at any other time (SN: 1/4/75, p. 5). Then last year, Richard L. Doty and his colleagues at the University of Pennsylvania found that male subjects consider women's vaginal odors more intense and agreeable during the preovulatory and ovulatory phase of the menstrual cycle than at any other phase (SN: 1/3/76, p. 6). □

Geophysicist next science adviser?

Geophysicist Frank Press of the Massachusetts Institute of Technology has emerged as the top contender for the presidential science adviser post, SCIENCE NEWS has learned. Contrary to other press reports, however, he had not yet been offered the job by early this week.

On Thursday, Feb. 10, Press met with President Jimmy Carter to exchange views on science policy. Finally, Carter reportedly asked Press to write a description of how he would proceed if appointed the director of the Office of Science and Technology Policy (OSTP)—in effect, the President's chief science adviser.

At midweek, Carter apparently was still considering the written reply, and Press told SCIENCE NEWS he did not know when a decision might actually be made. He would not comment further on the job or on his discussions with the President.

Press is currently the chairman of the Department of Earth and Planetary Sciences at MIT and serves on several government advisory panels. For a decade he has been a leader in efforts to increase funding for earthquake research and is credited with helping bring about this year's major budget increase in this area. He was a member of the old President's Science Advisory Committee in the Kennedy administration, now serves on the National Science Board and has consulted for several other agencies, including the Department of Defense and the Arms Control and Disarmament Agency.

As a scientist, Press has pursued a wide range of related interests. He was a member of the team of geophysicists that first identified the long-period oscillations that travel around the world following an earthquake—waves now measured by a seismometer named after Press and a colleague. During the International Geophysical Year, he helped do seismic analysis that showed Antarctica to be a true continent, in honor of which there is now a Mt. Press in Antarctica.

In the early 1960s he helped develop seismic techniques to police the atomic test ban treaties then being negotiated. When Apollo astronauts landed on the moon, they left behind a seismometer designed and built by Press and his coworkers. More recently, he has chaired the National Academy of Sciences Committee on Scholarly Communication with the People's Republic of China and traveled to China to study earthquake prediction. He reported personally to President Ford about the Chinese successes.

Among his colleagues, Press has a reputation for quiet scholarship, accompanied by an active concern for applying what has been learned. In pressing for a larger commitment to earthquake prediction, for instance, he has followed a low-key, rational approach but supported it with a tenacity capable of sustaining the effort over four administrations.

Carter's apparent choice has raised speculation in Washington about what sort of science policy to expect for the next four years. Some observers have pointed to Press's obvious strengths in matters dealing with natural resources and the environment but question his willingness to "rock the boat" on sensitive military matters, like the B-1 bomber. Appointment of an academic scientist, rather than a science administrator, would also raise questions over the role the next science adviser will play in Carter's much discussed plans for administrative reorganization.

Even if Press were to be appointed immediately, it would be too late for him to affect this year's revised science budget, which will be submitted to Congress on Feb. 22. The changes for R&D are expected to be small, however, except for possible cuts in defense R&D and priority changes rumored for ERDA. □

NIH director stays, CDC director goes

"Politics is out at NIH," Joseph E. Califano Jr. has told the staff of the National Institutes of Health. To prove his point, the new Secretary of Health, Education and Welfare announced that the Carter administration would retain Donald S. Frederickson as the director of NIH.

Frederickson is a Republican appointed by Ford a year and a half ago and will be one of the few Ford men expected to remain in the new administration. It was a sign that Carter would not subject NIH to partisan politics where many say it has floundered since the Nixon years.

Past NIH directors have been the object of much political maneuvering. Both Robert Q. Marston and Robert S. Stone were asked to leave their posts by Richard Nixon, the first President empowered to appoint the NIH director. Since then, critics have charged that basic research at NIH has suffered from the increased emphasis on goal-oriented research. Much of the criticism surfaced in the form of a statement drafted by the Federation of American Scientists two years ago (SN: 12/21/74, p. 389). Although no move is expected to return the directorship to a nonpolitical position, the NIH staff greeted the announcement with much enthusiasm.

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While NIH was withdrawing from the political arena, another agency of the HEW, the Center for Disease Control in Atlanta, was again drawn inside. On Feb. 7, David J. Sencer, director of the CDC since 1966 and an employee since 1960, announced that he had been asked to resign his post by Califano. Immediate reaction blamed the resignation on the criticism the CDC has received for its handling of the swine flu immunization program and its investigation of the Legionnaires' disease. At least one group of scientists at a virology meeting on the day of the announcement considered Sencer a competent administrator and found his resignation unfortunate.

But at a press conference following the resignation, Califano disagreed with the notion that the politics cast out of NIH had somehow found its way to the CDC. He said that while interviewing candidates for the position of assistant secretary of health, he found that all thought CDC "could do with some fresh air, some fresh faces." Califano also insisted that CDC had not been singled out for political reasons since other health administrators from past years had also been asked to resign. "If you had been through what I have been through in the last week trying to think through this swine flu program," Califano said, "you would be damned sure that there were no politics in the health area and that you had the best minds available in this country to help you with those issues."

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During all the shuffling of positions in the new Carter administration, the House of Representatives was dismembering the controversial Joint Committee on Atomic Energy. Opponents felt the Committee had too long promoted the adoption of nuclear energy without properly regulating its use. All the former functions of the JCAE have now been distributed to five committees in the House, with the oversight of ERDA going to the Science and Technology Committee and domestic regulation of nuclear energy to the Interior Committee. Oversight of military uses of atomic energy goes to the Armed Services Committee. □